CLAIMS

I claim:

1. A video processing system for characterizing an image, comprising:

a characterizing device that is configured to partition pixels of the image into a first set of color pixels and a second set of non-color pixels, and to create at least one of:

a histogram of chromatic components within the first set of color pixels, and

a histogram of brightness components within the second set of non-color pixels.

2. The video processing system of claim 1, wherein

the characterizing device is further configured to create a composite histogram that includes the histogram of chromatic components and the histogram of brightness components.

3. The video processing system of claim 2, wherein

the composite histogram corresponds to a target histogram, and

the video processing system further includes

a color-matching device that is configured to compare one or more other composite histograms to the target histogram.

4. The video processing system of claim 3, wherein

a limited number of different chromatic component values and brightness component values are used to create a target histogram vector corresponding to the target histogram, and

the color-matching device is configured to create one or more other histogram vectors corresponding to the other composite histograms based on the limited number of different chromatic component values and brightness component values corresponding to the target histogram.

5. The video processing system of claim 1, wherein at least one of:

the chromatic components include at least one of a hue and a saturation component of a hue-saturation-intensity color model, and

the brightness components include an intensity component of the hue-saturation-intensity color model.

6. The video processing system of claim 1, wherein

the histogram of chromatic components corresponds to a target histogram, and

the video processing system further includes

a color-matching device that is configured to compare one or more other histograms of chromatic components to the target histogram.

7. The video processing system of claim 6, wherein

a limited number of different chromatic component values are used to create a target histogram vector corresponding to the target histogram, and

the color-matching device is configured to create one or more other histogram vectors corresponding to the other histograms based on the limited number of different chromatic component values.

8. The video processing system of claim 1, wherein

the second set of non-color pixels are defined based as pixels having color values that lie within a specified distance from a line of gray values in a defined color space.

9. The video processing system of claim 1, further including

a color modeler that is configured to convert a red-green-blue representation of each pixel value into a hue-saturation-intensity representation of the pixel value.

10. The video processing system of claim 1, further including

a target tracker that is configured to track a target in one or more images, based on the histogram of chromatic components.

11. A method of characterizing an image comprising:

partitioning pixels comprising the image into a first set of color pixels and a second set of non-color pixels, and

creating at least one of:

a histogram of chromatic components comprising the first set of color pixels, and

a histogram of brightness components within the second set of non-color pixels.

12. The method of claim 11, further including

creating a composite histogram based on the histograms of chromatic components and brightness components.

13. The method of claim 12, wherein

the composite histogram corresponds to a target histogram, and

the method further includes

comparing one or more other composite histograms to the target histogram.

14. The method of claim 13, wherein

a limited number of different chromatic component values and brightness component values are used to create a target histogram vector corresponding to the target histogram, and

comparing the one or more other composite histograms includes

creating one or more other histogram vectors corresponding to the other histograms based on the limited number of different chromatic component values and brightness component values of the target histogram vector.

15. The method of claim 11, wherein at least one of:

the chromatic components correspond to at least one of a hue component and a saturation component of a hue-saturation-intensity color model of each color pixel, and

the brightness components include an intensity component of the hue-saturation-intensity color model.

16. The method of claim 11, wherein

the histogram of chromatic components correspond to a target histogram, and

the method further includes

comparing one or more other histograms of chromatic components to the target histogram.

17. The method of claim 16, wherein

a limited number of different chromatic component values are used to create a target histogram vector corresponding to the target histogram, and

comparing the one or more other histograms includes

creating one or more other histogram vectors corresponding to the other histograms based on the limited number of different chromatic component values.

18. The method of claim 11, wherein

the second set of non-color pixels are defined based as pixels having color values that lie within a specified distance from a line of gray values in a defined color space.

19. The method of claim 11, further including

converting a red-green-blue representation of each pixel value into a hue-saturation-intensity representation of the pixel value.